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PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: RODERICK DANIEL DOYLE

THE PATENT OFFICE LONDON

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International Classification:—**B41j. D21h.**

COMPLETE SPECIFICATION

Apparatus for Presenting a Manifold Pack of Record Material to a Rotatable Platen of a Printing Machine

We, THE NATIONAL CASH REGISTER COMPANY LIMITED, of 206—216, Marylebone Road, London, N.W.1, a Company incorporated under the laws of the Kingdom of Great Britain, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to improved apparatus for presenting a manifold pack of record material to a rotatable platen of a printing machine, such as an accounting machine, a calculating machine, a typewriter, or a teleprinter, which is provided with a travelling record material carriage.

It has previously been proposed to provide a method of producing such manifold copies, preferably by the use of chemically-coated paper, and apparatus for carrying the method into effect. One embodiment of said apparatus is designed to be placed on the floor to the rear of the machine and carries a plurality of single-wound rolls of record material which are brought together in the form of a manifold pack, passed over a guide rod, and thence to the platen of the printing machine. However, this apparatus requires considerable space to be available to the rear of the printing machine both to ensure that the manifold pack can be freely fed from its individual supply rolls upon rotation of the platten, and to provide acess to the apparatus for the operator to renew exhausted rolls of record material. Another embodiment of said apparatus is designed to be attached to and extend upwardly from a baseboard, or support, to the rear of the printing machine and to carry a plurality of single-wound rolls of record material which are brought together to form a manifold pack at a suitable point to the rear of said machine. This apparatus also requires considerable space to be available to the rear of the printing machine and, in view of the height of the apparatus, makes difficult the renewal of exhausted rolls of record material, especially if the machine operator is of small stature.

It is therefore, the object of the present invention to provide apparatus for presenting a manifold pack of record material to a printing machine which apparatus occupies the minimum possible space and which can quickly and easily be rendered accessible for the renewal of the rolls when the latter have become exhausted.

Accordingly the invention comprises apparatus for presenting a manifold pack of record material to a rotatable platen of a printing machine, the manifold pack comprising a plurality of webs of record material fed from individual single-wound supply rolls and collated over a guide member for feeding by the platen, including a supply roll carrier pivotally supported so that in its normal operating position it is vertically disposed at the rear of and depends below the machine and carries the rolls in superposed relationship with their axes horizintal, the carrier being movable to a horizontal position to bring the axes of the rolls into the vertical position to facilitate access thereto.

The above, and other subsidiary features of the present invention as applied, by way of example only, to one manner of carrying it into effect, will now be described, and are illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of the supply roll carrier in its operating position and a portion of a teleprinter machine in association therewith.

[F l.]

Fig. 2 is a perspective view of the supply roll carrier in its operating position with single wound supply rolls loaded thereon, and showing the collation of the single wound rolls into a manifold pack.

Fig. 3 is a perspective view of the supply roll carrier in its loading position.

Fig. 4 is a detail view of mechanism for latching the supply roll carrier in its operating position.

The record material carrier comprises a sheet of metal, or other suitable material, bent to channel section, the left-hand wall 10 (Figs. 1 and 2) of the channel being of considerably greater depth than the right-hand wall 11 (Figs. 1, 2 and 4) the base 12 of the channel being of slightly greater width than the width of the record material. The lower end of the channel has a triangular piece of sheet metal 13 secured thereto by any suitable means, and the top end of said channel has secured thereto a lower guide and wel-collating plate 14 which extends beyond the right-hand wall 11. Secured to the outer face of the left-hand wall 10 by means of nuts (not shown) threaded onto reduced threaded ends of four record material carrying spindles 15 is an inverted L-shaped strengthening strip 16, the upper end of which carries an upper guide plate 17, a right-hand edge 17a of which is bent downwardly to form an extension of the left-hand wall 10.

Each spindle 15 has a hole therethrough near its right-hand end, which hole is so positioned as to enable free rotation, without substantial side-play, of single-wound rolls 18 of record material when an angled roll retaining spigot 19 is placed therein.

Pivoted to the outer face of the right-hand wall 10 at 20a is an arm 20 having secured in its upper end a rod 21 to which is pivotally attached by an suitable means, such as a pair of spring clips 22 (Fig. 2) a bridging plate 23.

A machine having a travelling record material carriage provided with a rotatable platen, such as teleprinter 25 partially illustrated in Figs. 1 and 2, is positioned on a baseboard 24 and held in adjusted position thereon by adjustable right-angled members 26, one of which is shown in Fig. 1. The baseboard 24 has an inverted L-shaped strip 27 of metal secured thereto, the downwardly extending portion of the strip 27 having a pivot stud 28 screwed therein and about which the carrier can be pivoted.

A combined stop and latch member 29 (see particularly Fig. 4) is secured to the baseboard 24 in such manner as to prevent clockwise movement of the carrier from its vertical position by the engagement of a vertical surface of a lateral projection with the right-hand wall 11, the under-surface 29a of the laterial projection also forming a stop surface as described later. A longitudinally tapered upwardly extending surface 30 of the member 29 is engaged by a cranked latch 31 secured to the base 12 of the channel near its right-hand edge when the carrier is in its normal position.

Also secured to the baseboard 24, near its left-hand rear edge is a bolt 32, the tongue of which is slidable so as to project over the right-hand wall 11 when the carrier has been rocked counter-clockwise from the position of Figs. 1 and 2 to the position shown in Fig. 3 thereby to retain the carrier in said position.

In order to render the apparatus ready for use the arm 20 is first pivoted to a substantially vertical position so as to bring the bridging plate 23 directly above the upper guide plate 17, whereupon the carrier can be pivoted counter-clockwise from the vertical position shown in Fig. 1 to the horizontal position shown in Fig. 3 in which the right-hand wall 11 contacts the under surface 29a of the member 29. The bolt 32 is now operated so as to position its tongue over the said wall 11, thereby to retain the carrier in horizontal position.

The spigots 19 are next removed from the spindles 15 and a single-wound roll of record material placed upon the left-hand spindle 15 as viewed in Fig. 3. The rear surface of said roll of record material is provided with a coating including a normally substantially colourless chemically reactive compound in fluid form. The intermediate spindles 15 each have placed thereon a single-wound roll of record material 18 the rear surface of which is also provided with a coating including a normally substantially colourless chemically reactive compound in fluid form, and the front surface of which is coated with a chemical substance which, when the aforementioned reactive compound comes into contact therewith, causes the said reactive compound to assume a colouration. The right-hand spindle 15 has placed thereon a single-wound roll of record material 18 the front surface of which is coated with the coacting chemical substance. The spigots 19 are now replaced and the webs of the individual supply rolls 18 are manually fed in their correct cooperative relationship from the rolls and are collated to form a manifold pack as the webs pass over the guide plate 14.

The tongue of the bolt 32 is now withdrawn from above the wall 11, whereupon the carrier pivots clockwise under the influence of gravity from the position shown in Fig. 3, to the position shown in Fig. 1 wherein the cranked latch 31 engages the upwardly extending surface 30 of the member 29 and the wall 11 engages the vertical surface of the lateral projection of said member.

The manifold pack is next manually fed from its position above the guide plate 14 into the throat of the teleprinter 25, around the platen thereof, and out above the upper casing of the teleprinter. The arm 20 is rocked clockwise to the position shown in Fig. 2 so that the bridging plate 23 forms a bridge between the upper casing of the teleprinter and the guide plate 17 over which the manifold pack passes freely when the platen is line-spaced automatically during operation of the teleprinter.

It will be appreciated that the application of pressure to the manifold pack, such as by the type members of the teleprinter, causes local colouration of the webs of record material underlying the top web, the latter being printed upon by the usual ink ribbon.

The chemicals used for coating the record material are of the kind between which an adsorption chemical reaction initially takes place, and which results in a sharply defined image.

Preferably the coating of the rear surface of the record material includes an adsorbate, such as crystal violet lactone, entrapped in capsules of microscopic size which are spread over the paper in intimate contiguity and adhere together to form the coating. The coating substance with which the adsorbate reacts is coated on the front surface of each underlying web to form a colouration when brought into intimate contact with said coating on the rear surface of its overlying web is preferably an adsorbent clay, such as attapulgite. In order to ensure permanency of the resultant image, a further substance such as benzoyl leuco methylene blue may be included with the adsorbate, said further substance assuming colour with age.

Alternatively, the reactive compound may be dissolved in chlorinated diphenyl and dispersed as fine droplets in a continuous phase coating substance such as gelatin or latex.

WHAT WE CLAIM IS:—

1. Apparatus for presenting a manifold pack of record material to a rotatable platen of a printing machine, the manifold pack comprising a plurality of webs of record material fed from individual single-wound supply rolls and collated over a guide member for feeding by the platen, including a supply roll carrier pivotally supported so that in its normal operation position it is vertically disposed at the rear of and depends below the machine and carries the rolls in superposed relationship with their axes horizontal, the carrier being movable to a horizontal position to bring the axes of the rolls into the vertical position to facilitate access thereto.

2. Apparatus according to Claim 1, in which the carrier includes a channel-shaped member having one wall of substantially greater width than the other wall, the supply rolls being adapted to be rotatably mounted on spindles secured in said one wall.

3. Apparatus according to Claim 2, in which the channel-shaped member has secured thereto the record material guide and collating member, which latter member overlaps the said other wall.

4. Apparatus according to Claim 3, in which there is provided a further record material guide member secured to the carrier and which overlies and is spaced apart from the said record material guide and collating member.

5. Apparatus according to Claim 4, in which a bridge plate is pivotally carried by a rod mounted in an arm pivotally secured to said one wall, the arrangement being such that the arm is adapted to be pivoted so as to bring the bridge plate into bridging relationship between the rear casing of the machine and the said further record material guide member.

6. Apparatus according to Claim 2, in which the base of the channel member is pivotally supported by a baseboard for the machine so that the carrier is located in vertical position under the influence of gravity and, when moved to horizontal position the said other wall lies flush with the top surface of the baseboard.

7. Apparatus according to Claim 6, in which a stop and latch member is secured to the baseboard so as to co-operate with a cranked latch secured to the base of the channel member to retain the carrier in its vertical position and to permit rotation of the carrier in one direction only until the latter contacts the stop member when it reaches its horizontal position.

8. Apparatus for presenting a manifold pack of record material to a rotatable platen of a printing machine, substantially as described and illustrated herein.

E. T. BEAVIS,
Agent for the Applicants.

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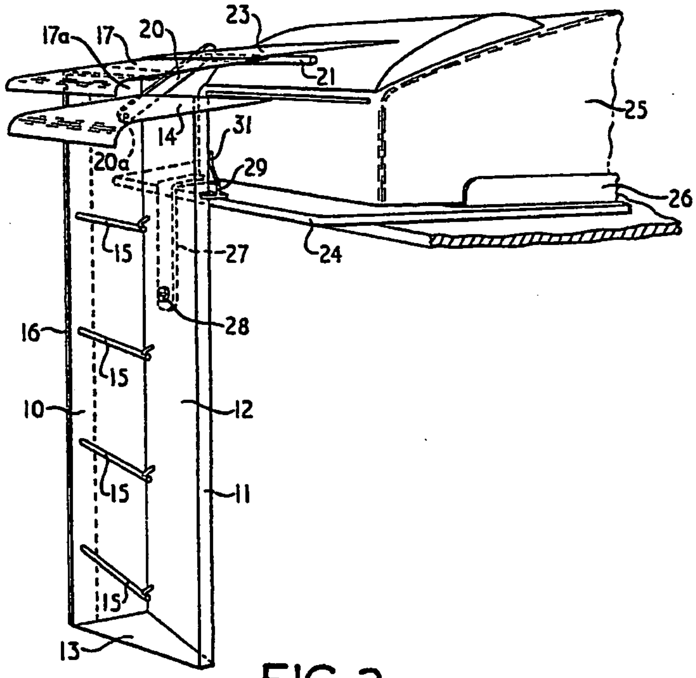
FIG. 1



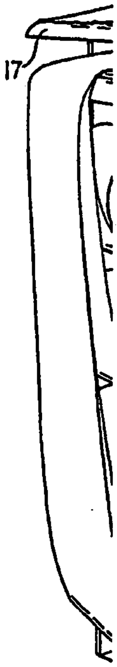
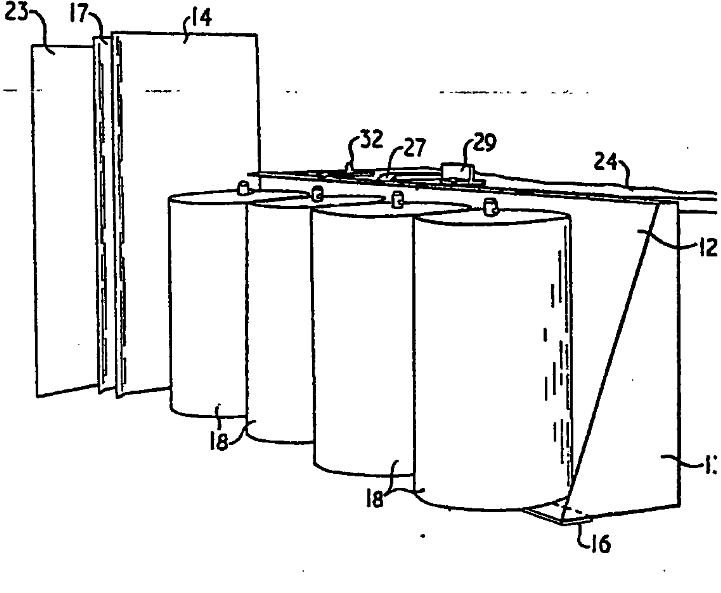

17

FIG. 3



854,473 **COMPLETE SPECIFICATION**

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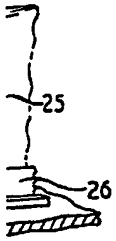


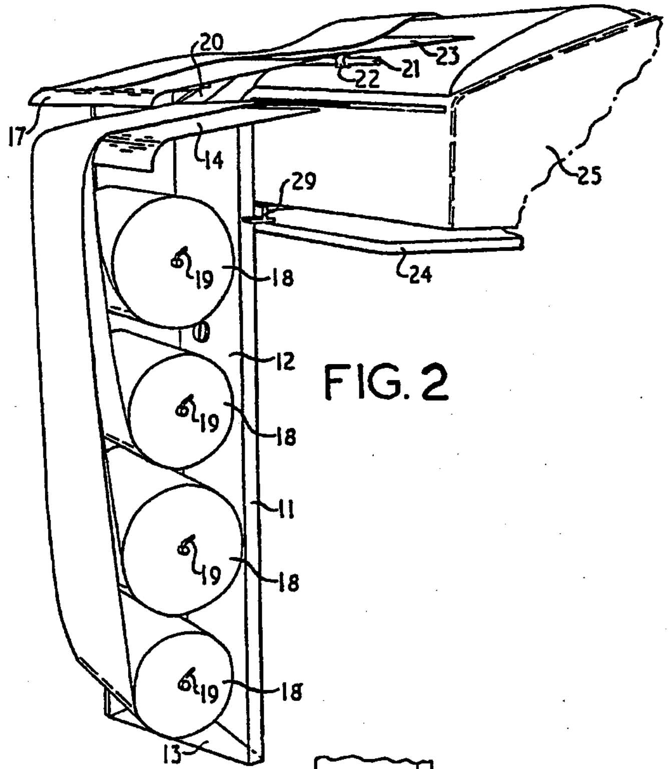
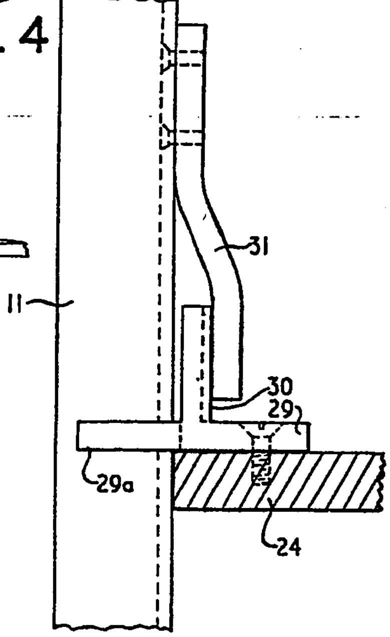


FIG. 2

FIG. 4



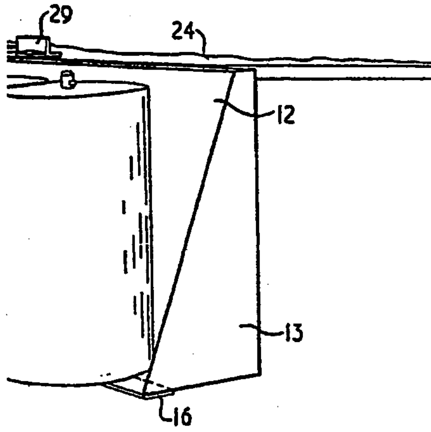


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FIG. 1

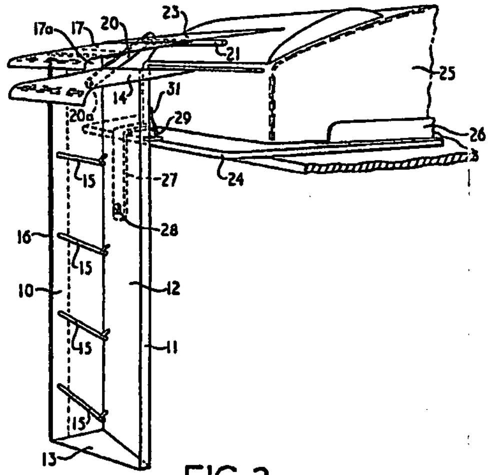

FIG. 2

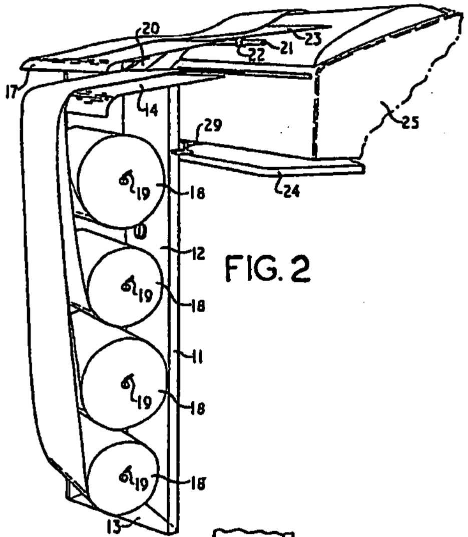

FIG. 3

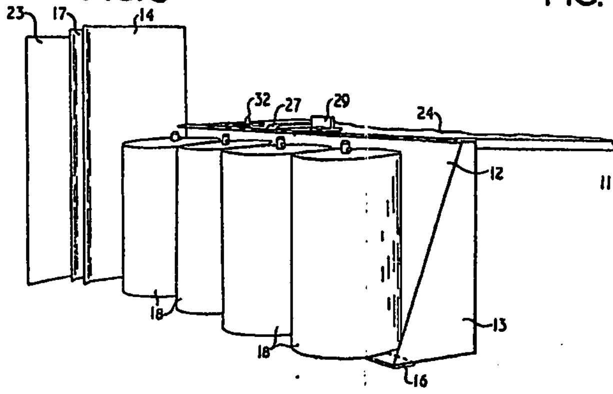

FIG. 4